

FIGURE 1

```

      10      20      30      40      50      60
ACCAGCGCAC TTCGGCAGCG GCAGCACCTC GGCAGCGTCA GTGAAAATGC CAAGCAAGAA

      70      80      90     100     110     120
AAGCGGCCCC CAACCCCATATA AGAGGTGGGT GTTCACCCTT AATAATCCTT CCGAGGAGGA

     130     140     150     160     170     180
GAAAAACAAA ATACGGGAGC TTCCAATCTC CCTTTTGTAT TATTTTGTTT GTGGCGAGGA

     190     200     210     220     230     240
AGGTTTGGAAGAGGGTAGAA CTCCTCACCT CCAGGGGTTT GCGAATTTTG CTAAGAAGCA

     250     260     270     280     290     300
GACTTTTAAC AAGGTGAAGT GGTATTTTGG TGCCCGCTGC CACATCGAGA AAGCGAAAGG

     310     320     330     340     350     360
AACCGACCAG CAGAATAAAG AATACTGCAG TAAAGAAGGC CACATACTTA TCGAGTGTGG

     370     380     390     400     410     420
AGCTCCGCGG AACCAGGGGA AGCGCAGCGA CCTGTCTACT GCTGTGAGTA CCCTTTTGGA

     430     440     450     460     470     480
GACGGGGTCT TTGGTGACTG TAGCCGAGCA GTTTCCTGTA ACGTATGTGA GAAATTTCCG

     490     500     510     520     530     540
CGGGCTGGCT GAACTTTTGA AAGTGAGCGG GAAGATGCAG CAGCGTGATT GGAAGACAGC

     550     560     570     580     590     600
TGTACACGTC ATAGTGGGCC CGCCCGGTTG TGGGAAGAGC CAGTGGGCCC GTAATTTTGC

     610     620     630     640     650     660
TGAGCCTAGG GACACCTACT GGAAGCCTAG TAGAAATAAG TGGTGGGATG GATATCATGG

     670     680     690     700     710     720
AGAAGAAGTT GTTGTTTTGG ATGATTTTGA TGGCTGGTTA CCTTGGGATG ATCTACTGAG

     730     740     750     760     770     780
ACTGTGTGAC CGGTATCCAT TGA CTGTAGA GACTAAAGGG GGTACTGTTC CTTTTTTGGC

     790     800     810     820     830     840
CCGCAGTATT TTGATTACCA GCAATCAGGC CCCCCAGGAA TGGTACTCCT CAACTGCTGT

     850     860     870     880     890     900
CCCAGCTGTA GAAGCTCTCT ATCGGAGGAT TACTACTTTG CAATTTTGGA AGACTGCTGG

```

FIGURE 2

```

      910      920      930      940      950      960
AGAACAATCC ACGGAGGTAC CCGAAGGCCG ATTTGAAGCA GTGGACCCAC CCTGTGCCCT

      970      980      990      1000      1010      1020
TTTCCCATAT AAAATAAATT ACTGAGTCTT TTTTGTTATC ACATCGTAAT GGTTTTTATT

      1030      1040      1050      1060      1070      1080
TTTATTCATT TAGAGGGTCT TTCAGGATAA ATTCTCTGAA TTGTACATAA ATAGTCAACC

      1090      1100      1110      1120      1130      1140
TTACCACATA ATTTTGGGCT GTGGTTGCAT TTTGGAGCGC ATAGCCCAGG CCTGTGTGCT

      1150      1160      1170      1180      1190      1200
CGACATTGGT GTGGGTATTT AAATGGAGCC ACAGCTGGTT TCTTTTATTA TTTGGCTGGA

      1210      1220      1230      1240      1250      1260
ACCAATCAAT TGTTTGGTCT AGCTCTGGTT TGGGGGTGAA GTACCTGGAG TGGTAGGTAA

      1270      1280      1290      1300      1310      1320
AGGGCTGCCT TATGGTGTGG CGGGAGGAGT AGTTAATATA GGGGTCATAG GCCAAGTTGG

      1330      1340      1350      1360      1370      1380
TGGAGGGGGT TACAAAGTTG GCATCCAAGA TAACAACAGT GGACCCAACA CCTCTTTGAT

      1390      1400      1410      1420      1430      1440
TAGAGGTGAT GGGGTCTCTG GGGTAAATT CATATTTAGC CTTTCTAATA CGGTAGTATT

      1450      1460      1470      1480      1490      1500
GGAAAGGTAG GGGTAGGGGG TTGGTGCCGC CTGAGGGGGG GAGGAACTGG CCGATGTTGA

      1510      1520      1530      1540      1550      1560
ATCTCAGCTC GTTAACATTC CAAGATGGCT GCGAGTGTCC TCCTCTTATG GTGAGTACAA

      1570      1580      1590      1600      1610      1620
ATTCTCTAGA AAGGCGGGAA TTGAAGATAC CCGTCTTTCT GCGCCATCTG TAACGGTTTC

      1630      1640      1650      1660      1670      1680
TGAAGGCGGG GTGTACCAAA TATGGTCTTC TCCGGAGGAT GTTTCCAAGA TGGCTGCGGG

      1690      1700      1710      1720      1730      1740
GGCGGGTCCG TCTTCTGCGG TAACGCCTCC TTGGCCACGT CATCCTATAA AAGTGAAAGA

      1750      1760      1770      1780      1790      1800
AGTGCGCTGC TGTAGTATT. ....

```

FIGURE 2 (continuation)

Leu Ala Ser Arg Cys Arg Cys Cys Arg Pro Leu Thr Leu Ser Phe Ala Leu Cys  
 Trp Arg Val Glu Ala Ala Ala Gly Arg Cys Arg \*\*\* His Phe His Trp Ala  
 Gly Ala Cys Lys Pro Leu Pro Leu Val Glu Ala Ala Asp Thr Phe Ile Gly Leu  
 ---  
 3' TGG TCG CGT GAA GCC GTC GCC GTC GTG GAG CCG TCG CAG TCA CTT TTA CGG TTC  
                   9                  18                  27                  36                  45                  54  
 5' ACC AGC GCA CTT CGG CAG CGG CAG CAC CTC GGC AGC GTC AGT GAA AAT GCC AAG  
 ---  
 Thr Ser Ala Leu Arg Gln Arg Gln His Leu Gly Ser Val Ser Glu Asn Ala Lys  
 Pro Ala His Phe Gly Ser Gly Ser Thr Ser Ala Ala Ser Val Lys Met Pro Ser  
 Gln Arg Thr Ser Ala Ala Ala Ala Pro Arg Gln Arg Gln \*\*\* Lys Cys Gln Ala  
  
 Ser Phe Arg Gly Ala Val Gly Tyr Ser Thr Pro Thr \*\*\* Gly \*\*\* Tyr Asp Lys  
 Leu Phe Ala Ala Arg Leu Gly Met Leu Pro Pro His Glu Gly Lys Ile Ile Arg  
 Leu Phe Leu Pro Gly Cys Gly Trp Leu Leu His Thr Asn Val Arg Leu Leu Gly  
 ---  
 GTT CTT TTC GCC GGG CGT TGG GGT ATT CTC CAC CCA CAA GTG GGA ATT ATT AGG  
                   63                  72                  81                  90                  99                  108  
 CAA GAA AAG CGG CCC GCA ACC CCA TAA GAG GTG GGT GTT CAC CCT TAA TAA TCC  
 ---  
 Gln Glu Lys Arg Pro Ala Thr Pro \*\*\* Glu Val Gly Val His Pro \*\*\* \*\*\* Ser  
 Lys Lys Ser Gly Pro Gln Pro His Lys Arg Trp Val Phe Thr Leu Asn Asn Pro  
 Arg Lys Ala Ala Arg Asn Pro Ile Arg Gly Gly Cys Ser Pro Leu Ile Ile Leu  
  
 Arg Pro Pro Ser Phe Cys Phe Val Pro Ala Glu Leu Arg Gly Lys Gln Asn Asn  
 Gly Leu Leu Leu Phe Val Phe Tyr Pro Leu Lys Trp Asp Gly Lys Lys Ile Ile  
 Glu Ser Ser Ser Phe Phe Leu Ile Arg Ser Ser Gly Ile Glu Arg Lys Ser \*\*\*  
 ---  
 AAG GCT CCT CCT CTT TTT GTT TTA TGC CCT CGA AGG TTA GAG GGA AAA ACT AAT  
                   117                  126                  135                  144                  153                  162  
 TTC CGA GGA GGA GAA AAA CAA AAT ACG GGA GCT TCC AAT CTC CCT TTT TGA TTA  
 ---  
 Phe Arg Gly Gly Glu Lys Gln Asn Thr Gly Ala Ser Asn Leu Pro Phe \*\*\* Leu  
 Ser Glu Glu Glu Lys Asn Lys Ile Arg Glu Leu Pro Ile Ser Leu Phe Asp Tyr  
 Pro Arg Arg Arg Lys Thr Lys Tyr Gly Ser Phe Gln Ser Pro Phe Leu Ile Ile  
  
 Gln Lys His Arg Pro Leu Asn Pro Leu Pro Tyr Phe Glu Glu Gly Gly Pro Thr  
 Lys Asn Thr Ala Leu Phe Thr Gln Phe Leu Thr Ser Ser Arg Val Glu Leu Pro  
 Lys Thr Gln Pro Ser Ser Pro Lys Ser Ser Pro Leu Val Gly \*\*\* Arg Trp Pro  
 ---  
 AAA ACA AAC ACC GCT CCT TCC AAA CCT TCT CCC ATC TTG AGG AGT GGA GGT CCC  
                   171                  180                  189                  198                  207                  216  
 YTT TGT TTG TGG CGA GGA AGG TTT GGA AGA GGG TAG AAC TCC TCA CCT CCA GGG  
 ---  
 Phe Cys Leu Trp Arg Gly Arg Phe Gly Arg Gly \*\*\* Asn Ser Ser Pro Pro Gly  
 Phe Val Cys Gly Glu Glu Gly Leu Glu Glu Gly Arg Thr Pro His Leu Gln Gly  
 Leu Phe Val Ala Arg Lys Val Trp Lys Arg Val Glu Leu Leu Thr Ser Arg Gly  
  
 Gln Ser Asn Gln \*\*\* Ser Ala Ser Lys \*\*\* Cys Pro Ser Thr Thr Asn Gln His  
 Lys Arg Ile Lys Ser Leu Leu Leu Ser Lys Val Leu His Leu Pro Ile Lys Thr  
 Asn Ala Phe Lys Ala Leu Phe Cys Val Lys Leu Leu Thr Phe His Tyr Lys Pro  
 ---  
 CAA ACG CTT AAA ACG ATT CTT CGT CTG AAA ATT GTT CCA CTT CAC CAT AAA ACC  
                   225                  234                  243                  252                  261                  270  
 GTT TGC GAA TTT TGC TAA GAA GCA GAC TTT TAA CAA GGT GAA GTG GTA TTT TGG  
 ---  
 Val Cys Glu Phe Cys \*\*\* Glu Ala Asp Phe \*\*\* Gln Gly Glu Val Val Phe Trp  
 Phe Ala Asn Phe Ala Lys Lys Gln Thr Phe Asn Lys Val Lys Trp Tyr Phe Gly  
 Leu Arg Ile Leu Leu Arg Ser Arg Leu Leu Thr Arg \*\*\* Ser Gly Ile Leu Val

FIGURE 3

Gly Ser Gly Cys Arg Ser Leu Ser Leu Phe Arg Gly Ala Ser Tyr Leu Ile Ser  
 Gly Ala Ala Val Asp Leu Phe Arg Phe Ser Gly Val Leu Leu Ile Phe Phe Val  
 Ala Arg Gln Trp Met Ser Phe Ala Phe Pro Val Ser Trp Cys Phe Leu Ser Tyr  
 ---  
 ACG GGC GAC GGT GTA GCT CTT TCG CTT TCC TTG GCT GGT CGT CTT ATT TCT TAT  
 279 288 297 306 315 324  
 TGC CCG CTG CCA CAT CGA GAA AGC GAA AGG AAC CGA CCA GCA GAA TAA AGA ATA  
 ---  
 Cys Pro Leu Pro His Arg Glu Ser Glu Arg Asn Arg Pro Ala Glu \*\*\* Arg Ile  
 Ala Arg Cys His Ile Glu Lys Ala Lys Gly Thr Asp Gln Gln Asn Lys Glu Tyr  
 Pro Ala Ala Thr Ser Arg Lys Arg Lys Glu Pro Thr Ser Arg Ile Lys Asn Thr  
 ---  
 Cys Tyr Leu Leu Gly Cys Val \*\*\* Arg Thr His Leu Glu Ala Ser Gly Pro Ser  
 Ala Thr Phe Phe Ala Val Tyr Lys Asp Leu Thr Ser Ser Arg Pro Val Leu Pro  
 Gln Leu Leu Ser Pro Trp Met Ser Ile Ser His Pro Ala Gly Arg Phe Trp Pro  
 ---  
 GAC GTC ATT TCT TCC GGT GTA TGA ATA GCT CAC ACC TCG AGG CGC CTT GGT CCC  
 333 342 351 360 369 378  
 CTG CAG TAA AGA AGG CCA CAT ACT TAT CGA GTG TGG AGC TCC GCG GAA CCA GGG  
 ---  
 Leu Gln \*\*\* Arg Arg Pro His Thr Tyr Arg Val Trp Ser Ser Ala Glu Pro Gly  
 Cys Ser Lys Glu Gly His Ile Leu Ile Glu Cys Gly Ala Pro Arg Asn Gln Gly  
 Ala Val Lys Lys Ala Thr Tyr Leu Ser Ser Val Glu Leu Arg Gly Thr Arg Gly  
 ---  
 Ala Cys Arg Gly Thr \*\*\* Gln Gln Ser Tyr Gly Lys Pro Ser Pro Thr Lys Pro  
 Leu Ala Val Gln Arg Ser Ser His Thr Gly Lys Gln Leu Arg Pro Arg Gln  
 Phe Arg Leu Ser Arg Asp Val Ala Thr Leu Val Arg Lys Ser Val Pro Asp Lys  
 ---  
 CTT CGC GTC GCT GGA CAG ATG ACG ACA CTC ATG GGA AAA CCT CTG CCC CAG AAA  
 387 396 405 414 423 432  
 GAA GCG CAG CGA CCT GTC TAC TGC TGT GAG TAC CCT TTT GGA GAC GGG GTC TTT  
 ---  
 Glu Ala Gln Arg Pro Val Tyr Cys Cys Glu Tyr Pro Phe Gly Asp Gly Val Phe  
 Lys Arg Ser Asp Leu Ser Thr Ala Val Ser Thr Leu Leu Glu Thr Gly Ser Leu  
 Ser Ala Ala Thr Cys Leu Leu Leu \*\*\* Val Pro Phe Trp Arg Arg Gly Leu Trp  
 ---  
 Ser Gln Leu Arg Ala Thr Glu Gln Leu Thr His Ser Phe Asn Gly Arg Ala Pro  
 His Ser Tyr Gly Leu Leu Lys Arg Tyr Arg Ile His Ser Ile Glu Ala Pro Gln  
 Thr Val Thr Ala Ser Cys Asn Gly Thr Val Tyr Thr Leu Phe Lys Arg Pro Ser  
 ---  
 CCA CTG ACA TCG GCT CGT CAA AGG ACA TTG CAT ACA CTC TTT AAA GGC GCC CGA  
 441 450 459 468 477 486  
 GGT GAC TGT AGC CGA GCA GTT TCC TGT AAC GTA TGT GAG AAA TTT CCG CGG GCT  
 ---  
 Gly Asp Cys Ser Arg Ala Val Ser Cys Asn Val Cys Glu Lys Phe Pro Arg Ala  
 Val Thr Val Ala Glu Gln Phe Pro Val Thr Tyr Val Arg Asn Phe Arg Gly Leu  
 \*\*\* Leu \*\*\* Pro Ser Ser Phe Leu \*\*\* Arg Met \*\*\* Glu Ile Ser Ala Gly Trp  
 ---  
 Gln Val Lys Ser Leu Ser Arg Ser Ser Ala Ala Ala His Asn Ser Ser Leu Gln  
 Ser Phe Lys Gln Phe His Ala Pro Leu His Leu Leu Thr Ile Pro Leu Cys Ser  
 Ala Ser Ser Lys Phe Thr Leu Pro Phe Ile Cys Cys Arg Ser Gln Phe Val Ala  
 ---  
 CCG ACT TGA AAA CTT TCA CTC GCC CTT CTA CGT CGT CGC ACT AAC CTT CTG TCG  
 495 504 513 522 531 540  
 GGC TGA ACT TTT GAA AGT GAG CGG GAA GAT GCA GCA GCG TGA TTG GAA GAC AGC  
 ---  
 Gly \*\*\* Thr Phe Glu Ser Glu Arg Glu Asp Ala Ala Ala \*\*\* Leu Glu Asp Ser  
 Ala Glu Leu Leu Lys Val Ser Gly Lys Met Gln Gln Arg Asp Trp Lys Thr Ala  
 Leu Asn Phe \*\*\* Lys \*\*\* Ala Gly Arg Cys Ser Ser Val Ile Gly Arg Gln Leu

FIGURE 3 (continuation 1)

Val Arg \*\*\* Leu Pro Gly Ala Arg Asn His Ser Ser Gly Thr Pro Gly Tyr Asn  
 Tyr Val Asp Tyr His Ala Arg Gly Thr Thr Pro Leu Ala Leu Pro Gly Thr Ile  
 Thr Cys Thr Met Thr Thr Pro Gly Gly Pro Gln Pro Phe Leu Trp His Ala Arg Leu  
 ---  
 ACA TGT GCA GTA TCA CCC GGG CGG GCC AAC ACC CTT CTC GGT CAC CCG GGC ATT  
           549          558          567          576          585          594  
 TGT ACA CGT CAT AGT GGG CCC GCC CTG TTG TGG GAA GAG CCA GTG GGC CCG TAA  
 ---  
 Cys Thr Arg His Ser Gly Pro Ala Arg Leu Trp Glu Glu Pro Val Gly Pro \*\*\*  
 Val His Val Ile Val Gly Pro Pro Gly Cys Gly Lys Ser Gln Trp Ala Arg Asn  
 Tyr Thr Ser \*\*\* Trp Ala Arg Pro Val Val Gly Arg Ala Ser Gly Pro Val Ile

Gln Gln Ala \*\*\* Pro Cys Arg Ser Ser Ala \*\*\* Tyr Phe Tyr Thr Thr Pro His  
 Lys Ser Leu Arg Pro Val Gly Val Pro Leu Arg Thr Ser Ile Leu Pro Pro Ile  
 Lys Ala Ser Gly Leu Ser Val \*\*\* Gln Phe Gly Leu Leu Phe Leu His His Ser  
 ---  
 AAA ACG ACT CGG ATC CCT GTG GAT GAC CTT CGG ATC ATC TTT ATT CAC CAC CCT  
           603          612          621          630          639          648  
 TTT TGC TGA GCC TAG GGA CAC CTA CTG GAA GCC TAG TAG AAA TAA GTG GTG GGA  
 ---  
 Phe Cys \*\*\* Ala \*\*\* Gly His Leu Leu Glu Ala \*\*\* \*\*\* Lys \*\*\* Val Val Gly  
 Phe Ala Glu Pro Arg Asp Thr Tyr Trp Lys Pro Ser Arg Asn Lys Trp Trp Asp  
 Leu Leu Ser Leu Gly Thr Thr Gly Ser Leu Val Glu Ile Ser Gly Gly Met

Ile Asp His Leu Leu Leu Gln Gln Lys Pro His Asn Lys His Ser Thr Val Lys  
 Ser Ile Met Ser Phe Phe Asn Asn Asn Gln Ile Ile Lys Ile Ala Pro \*\*\* Arg  
 Pro Tyr \*\*\* Pro Ser Ser Thr Thr Thr Lys Ser Ser Lys \*\*\* Pro Gln Asn Gly  
 ---  
 ACC TAT AGT ACC TCT TCT TCA ACA ACA AAA CCT ACT AAA AAT ACC GAC CAA TGG  
           657          666          675          684          693          702  
 TGG ATA TCA TGG AGA AGA AGT TGT TGT TTT GGA TGA TTT TTA TGG CTG GTT ACC  
 ---  
 Trp Ile Ser Trp Arg Arg Ser Cys Cys Phe Gly \*\*\* Phe Leu Trp Leu Val Thr  
 Gly Tyr His Gly Glu Val Val Val Leu Asp Asp Phe Tyr Gly Trp Leu Pro  
 Asp Ile Met Glu Lys Lys Leu Leu Phe Trp Met Ile Phe Met Ala Gly Tyr Leu

Pro His Asp Val Ser Val Thr His Gly Thr Asp Met Ser Gln Leu Ser \*\*\* Leu  
 Pro Ile Ile \*\*\* Gln Ser Gln Thr Val Pro Ile Trp Gln Ser Tyr Leu Ser Phe  
 Gln Ser Ser Arg Ser Leu Ser His Ser Arg Tyr Gly Asn Val Thr Ser Val Leu  
 ---  
 AAC CCT ACT AGA TGA CTC TGA CAC ACT GGC CAT AGG TAA CTG ACA TCT CTG ATT  
           711          720          729          738          747          756  
 TTG GGA TGA TCT ACT GAG ACT GTG TGA CCG GTA TCC ATT GAC TGT AGA GAC TAA  
 ---  
 Leu Gly \*\*\* Ser Thr Glu Thr Val \*\*\* Pro Val Ser Ile Asp Cys Arg Asp \*\*\*  
 Trp Asp Asp Leu Leu Arg Leu Cys Asp Arg Tyr Pro Leu Thr Val Glu Thr Lys  
 Gly Met Ile Tyr \*\*\* Asp Cys Val Thr Gly Ile His \*\*\* Leu \*\*\* Arg Leu Lys

Pro Tyr Gln Glu Lys Lys Pro Gly Cys Tyr Lys Ser \*\*\* Trp Cys Asp Pro Gly  
 Pro Thr Ser Asn Arg Lys Gln Gly Ala Thr Asn Gln Asn Gly Ala Ile Leu Gly  
 Pro Pro Val Thr Gly Lys Lys Ala Arg Leu Ile Lys Ile Val Leu Leu \*\*\* Ala  
 ---  
 TCC CCC ATG ACA AGG AAA AAA CCG GGC GTC ATA AAA CTA ATG GTC GTT AGT CCG  
           765          774          783          792          801          810  
 AGG GGG TAC TGT TCC TTT TTT GGC CCG CAG TAT TTT GAT TAC CAG CAA TCA GGC  
 ---  
 Arg Gly Tyr Cys Ser Phe Phe Gly Pro Gln Tyr Phe Asp Tyr Gln Gln Ser Gly  
 Gly Gly Thr Val Pro Phe Leu Ala Arg Ser Ile Leu Ile Thr Ser Asn Gln Ala  
 Gly Val Leu Phe Leu Phe Trp Pro Ala Val Phe \*\*\* Leu Pro Ala Ile Arg Pro

FIGURE 3 (continuation 2)

Gly Pro Ile Thr Ser Arg Leu Gln Gln Gly Leu Gln Leu Leu Glu Arg Asp Ser  
 Gly Leu Phe Pro Val Gly \*\*\* Ser Ser Asp Trp Ser Tyr Phe Ser Glu Ile Pro  
 Gly Trp Ser His Tyr Glu Glu Val Ala Thr Gly Ala Thr Ser Ala Arg \*\*\* Arg  
 ---  
 GGG GGT CCT TAC CAT GAG GAG TTG ACG ACA GGG TCG ACA TCT TCG AGA GAT AGC  
 819 828 837 846 855 864  
 CCC CCA GGA ATG GTA CTC CTC AAC TGC TGT CCC AGC TGT AGA AGC TCT CTA TCG  
 ---  
 Pro Pro Gly Met Val Leu Leu Asn Cys Cys Pro Ser Cys Arg Ser Ser Leu Ser  
 Pro Gln Glu Trp Tyr Ser Ser Thr Ala Val Pro Ala Val Glu Ala Leu Tyr Arg  
 Pro Arg Asn Gly Thr Pro Gln Leu Leu Ser Gln Leu \*\*\* Lys Leu Ser Ile Gly  
 ---  
 Ser \*\*\* \*\*\* Lys Ala Ile Lys Ser Ser Gln Gln Leu Val Ile Trp Pro Pro Val  
 Pro Asn Ser Ser Gln Leu Lys Pro Leu Ser Ser Ser Phe Leu Gly Arg Leu Tyr  
 Leu Ile Val Val Lys Cys Asn Gln Phe Val Ala Pro Ser Cys Asp Val Ser Thr  
 ---  
 CTC CTA ATG ATG AAA CGT TAA AAC CTT CTG ACG ACC TCT TGT TAG GTG CCT CCA  
 873 882 891 900 909 918  
 GAG GAT TAC TAC TTT GCA ATT TTG GAA GAC TGC TGG AGA ACA ATC CAC GGA GGT  
 ---  
 Glu Asp Tyr Tyr Phe Ala Ile Leu Glu Asp Cys Trp Arg Thr Ile His Gly Gly  
 Arg Ile Thr Thr Leu Gln Phe Trp Lys Thr Ala Gly Glu Gln Ser Thr Glu Val  
 Gly Leu Leu Leu Cys Asn Phe Gly Arg Leu Leu Glu Asn Asn Pro Arg Arg Tyr  
 ---  
 Arg Leu Gly Ile Gln Leu Leu Pro Gly Val Arg His Gly Lys Gly Met Tyr Phe  
 Gly Phe Ala Ser Lys Phe Cys His Val Trp Gly Thr Gly Lys Glu Trp Ile Phe  
 Gly Ser Pro Arg Asn Ser Ala Thr Ser Gly Gly Gln Ala Arg Lys Gly Tyr Leu  
 ---  
 TGG GCT TCC GGC TAA ACT TCG TCA CCT GGG TGG GAC ACG GGA AAA GGG TAT ATT  
 927 936 945 954 963 972  
 ACC CGA AGG CCG ATT TGA AGC AGT GGA CCC ACC CTG TGC CCT TTT CCC ATA TAA  
 ---  
 Thr Arg Arg Pro Ile \*\*\* Ser Ser Gly Pro Thr Leu Cys Pro Phe Pro Ile \*\*\*  
 Pro Glu Gly Arg Phe Glu Ala Val Asp Pro Pro Cys Ala Leu Phe Pro Tyr Lys  
 Pro Lys Ala Asp Leu Lys Gln Trp Thr His Pro Val Pro Phe Ser His Ile Lys  
 ---  
 Leu Asn Ser Leu Arg Lys Gln \*\*\* \*\*\* Met Thr Ile Thr Lys Ile Lys Ile \*\*\*  
 Tyr Ile Val Ser Asp Lys Lys Asn Asp Cys Arg Leu Pro Lys \*\*\* Lys \*\*\* Glu  
 Ile Phe \*\*\* Gln Thr Lys Lys Thr Ile Val Asp Tyr His Asn Lys Asn Lys Asn  
 ---  
 TTA TTT AAT GAC TCA GAA AAA ACA ATA GTG TAG CAT TAC CAA AAA TAA AAA TAA  
 981 990 999 1008 1017 1026  
 AAT AAA TTA CTG AGT CTT TTT TGT TAT CAC ATC GTA ATG GTT TTT ATT TTT ATT  
 ---  
 Asn Lys Leu Leu Ser Leu Phe Cys Tyr His Ile Val Met Val Phe Ile Phe Ile  
 Ile Asn Tyr \*\*\* Val Phe Phe Val Ile Thr Ser \*\*\* Trp Phe Leu Phe Leu Phe  
 \*\*\* Ile Thr Glu Ser Phe Leu Leu Ser His Arg Asn Gly Phe Tyr Phe Tyr Ser  
 ---  
 Lys Ser Pro Arg Glu Pro Tyr Ile Arg Gln Ile Thr Cys Leu Tyr Asp Val Lys  
 Asn Leu Pro Asp Lys Leu Ile Phe Glu Arg Phe Gln Val Tyr Ile Thr Leu Arg  
 Met \*\*\* Leu Thr Lys \*\*\* Ser Leu Asn Glu Ser Asn Tyr Met Phe Leu \*\*\* Gly  
 ---  
 GTA AAT CTC CCA GAA AGT CCT ATT TAA GAG ACT TAA CAT GTA TTT ATC AGT TGG  
 1035 1044 1053 1062 1071 1080  
 CAT TTA GAG GGT CTT TCA GGA TAA ATT CTC TGA ATT GTA CAT AAA TAG TCA ACC  
 ---  
 His Leu Glu Gly Leu Ser Gly \*\*\* Ile Leu \*\*\* Ile Val His Lys \*\*\* Ser Thr  
 Ile \*\*\* Arg Val Phe Gln Asp Lys Phe Ser Glu Leu Tyr Ile Asn Ser Gln Pro  
 Phe Arg Gly Ser Phe Arg Ile Asn Ser Leu Asn Cys Thr \*\*\* Ile Val Asn Leu

FIGURE 3 (continuation 3)

Gly Cys Leu Lys Pro Ser His Asn Cys Lys Pro Ala Cys Leu Gly Pro Arg His  
 Val Val Tyr Asn Gln Ala Thr Thr Ala Asn Gln Leu Ala Tyr Gly Leu Gly Thr  
 \*\*\* Trp Met Ile Lys Pro Gln Pro Gln Met Lys Ser Arg Met Ala Trp Ala Gln  
 ---  
 AAT GGT GTA TTA AAA CCC GAC ACC AAC GTA AAA CCT CGC GTA TCG GGT CCG GAC  
 1089 1098 1107 1116 1125 1134  
 TTA CCA CAT AAT TTT GGG CTG TGG TTG CAT TTT GGA GCG CAT AGC CCA GGC CTG  
 ---  
 Leu Pro His Asn Phe Gly Leu Trp Leu His Phe Gly Ala His Ser Pro Gly Leu  
 Tyr His Ile Ile Leu Gly Cys Gly Cys Ile Leu Glu Arg Ile Ala Gln Ala Cys  
 Thr Thr \*\*\* Phe Trp Ala Val Val Ala Phe Trp Ser Ala \*\*\* Pro Arg Pro Val  
 ---  
 Ala Arg Cys Gln His Pro Tyr Lys Phe Pro Ala Val Ala Pro Lys Lys \*\*\*  
 His Glu Val Asn Thr His Thr Asn Leu His Leu Trp Leu Gln Asn Arg Lys Asn  
 Thr Ser Ser Met Pro Thr Pro Ile \*\*\* Ile Ser Gly Cys Ser Thr Glu Lys Ile  
 ---  
 ACA CGA GCT GTA ACC ACA CCC ATA AAT TTA CCT CGG TGT CGA CCA AAG AAA ATA  
 1143 1152 1161 1170 1179 1188  
 TGT GCT CGA CAT TGG TGT GGG TAT TTA AAT GGA GCC ACA GCT GGT TTC TTT TAT  
 ---  
 Cys Ala Arg His Trp Cys Gly Tyr Leu Asn Gly Ala Thr Ala Gly Phe Phe Tyr  
 Val Leu Asp Ile Gly Val Gly Ile \*\*\* Met Glu Pro Gln Leu Val Ser Phe Ile  
 Cys Ser Thr Leu Val Trp Val Phe Lys Trp Ser His Ser Trp Phe Leu Leu Leu  
 ---  
 Lys Ala Pro Val Leu \*\*\* Asn Asn Pro Arg Ala Arg Thr Gln Pro His Leu Val  
 Asn Pro Gln Phe Trp Asp Ile Thr Gln Asp Leu Glu Pro Lys Pro Thr Phe Tyr  
 Ile Gln Ser Ser Gly Ile Leu Gln Lys Thr \*\*\* Ser Gln Asn Pro Pro Ser Thr  
 ---  
 ATA AAC CGA CCT TGG TTA GTT AAC AAA CCA GAT CGA GAC CAA ACC CCC ACT TCA  
 1197 1206 1215 1224 1233 1242  
 TAT TTG GCT GGA ACC AAT CAA TTG TTT GGT CTA GCT CTG GTT TGG GGG TGA AGT  
 ---  
 Tyr Leu Ala Gly Thr Asn Gln Leu Phe Gly Leu Ala Leu Val Trp Gly \*\*\* Ser  
 Ile Trp Leu Glu Pro Ile Asn Cys Leu Val \*\*\* Leu Trp Phe Gly Gly Glu Val  
 Phe Gly Trp Asn Gln Ser Ile Val Trp Ser Ser Ser Gly Leu Gly Val Lys Tyr  
 ---  
 Gln Leu Pro Leu Tyr Leu Ala Ala Lys His His Pro Pro Leu Leu Leu \*\*\* Tyr  
 Arg Ser His Tyr Thr Phe Pro Gln Arg Ile Thr His Arg Ser Ser Tyr Asn Ile  
 Gly Pro Thr Thr Pro Leu Pro Ser Gly \*\*\* Pro Thr Ala Pro Pro Thr Thr Leu  
 ---  
 TGG ACC TCA CCA TCC ATT TCC CGA CGG AAT ACC ACA CCG CCC TCC TCA TCA ATT  
 1251 1260 1269 1278 1287 1296  
 ACC TGG AGT GGT AGG TAA AGG GCT GCC TTA TGG TGT GGC GGG AGG AGT AGT TAA  
 ---  
 Thr Trp Ser Gly Arg \*\*\* Arg Ala Ala Leu Trp Cys Gly Gly Arg Ser Ser \*\*\*  
 Pro Gly Val Val Gly Lys Gly Leu Pro Tyr Gly Val Ala Gly Gly Val Val Asn  
 Leu Glu Trp \*\*\* Val Lys Gly Cys Leu Met Val Trp Arg Glu Glu \*\*\* Leu Ile  
 ---  
 Leu Pro \*\*\* Leu Gly Leu Gln His Leu Pro Asn Cys Leu Gln Cys Gly Leu Tyr  
 Tyr Pro Asp Tyr Ala Leu Asn Thr Ser Pro Thr Val Phe Asn Ala Asp Leu Ile  
 Ile Pro Thr Met Pro Trp Thr Pro Pro Pro Pro \*\*\* Leu Thr Pro Met Trp Ser  
 ---  
 ATA TCC CCA GTA TCC GGT TCA ACC ACC TCC CCC AAT GTT TCA ACC GTA GGT TCT  
 1305 1314 1323 1332 1341 1350  
 TAT AGG GGT CAT AGG CCA AGT TGG TGG AGG GGG TTA CAA AGT TGG CAT CCA AGA  
 ---  
 Tyr Arg Gly His Arg Pro Ser Trp Trp Arg Gly Leu Gln Ser Trp His Pro Arg  
 Ile Gly Val Ile Gly Gln Val Gly Gly Gly Gly Tyr Lys Val Gly Ile Gln Asp  
 \*\*\* Gly Ser \*\*\* Ala Lys Leu Val Glu Gly Val Thr Lys Leu Ala Ser Lys Ile

FIGURE 3 (continuation 4)



9/17

Cys Cys His Val Trp Cys Arg Lys Ser \*\*\* Leu His His Pro Arg Gln Pro Leu  
Val Val Thr Ser Gly Val Gly Arg Gln Asn Ser Thr Ile Pro Asp Arg Pro Tyr  
Leu Leu Leu Pro Gly Leu Val Glu Lys Ile Leu Pro Ser Pro Thr Glu Pro Thr  
---  
ATT GTT GTC ACC TGG GTT GTG GAG AAA CTA ATC TCC ACT ACC CCA GAG ACC CCA  
1359 1368 1377 1386 1395 1404  
TAA CAA CAG TGG ACC CAA CAC CTC TTT GAT TAG AGG TGA TGG GGT CTC TGG GGT  
---  
\*\*\* Gln Gln Trp Thr Gln His Leu Phe Asp \*\*\* Arg \*\*\* Trp Gly Leu Trp Gly  
Asn Asn Ser Gly Pro Asn Thr Ser Leu Ile Arg Gly Asp Gly Val Ser Gly Val  
Thr Thr Val Asp Pro Thr Pro Leu \*\*\* Leu Glu Val Met Gly Ser Leu Gly \*\*\*  
---  
Ile \*\*\* Ile \*\*\* Gly Lys \*\*\* Tyr Pro Leu Ile Pro Phe Thr Pro Thr Pro Pro  
Phe Glu Tyr Lys Ala Lys Arg Ile Arg Tyr Tyr Gln Phe Pro Leu Pro Leu Pro  
Phe Asn Met Asn Leu Arg Glu Leu Val Thr Thr Asn Ser Leu Tyr Pro Tyr Pro  
---  
TTT TAA GTA TAA ATC GGA AAG ATT ATG CCA TCA TAA CCT TTC CAT CCC CAT CCC  
1413 1422 1431 1440 1449 1458  
AAA ATT CAT ATT TAG CCT TTC TAA TAC GGT AGT ATT GGA AAG GTA GGG GTA GGG  
---  
Lys Ile His Ile \*\*\* Pro Phe \*\*\* Tyr Gly Ser Ile Gly Lys Val Gly Val Gly  
Lys Phe Ile Phe Ser Leu Ser Asn Thr Val Val Leu Glu Arg \*\*\* Gly \*\*\* Gly  
Asn Ser Tyr Leu Ala Phe Leu Ile Arg \*\*\* Tyr Trp Lys Gly Arg Gly Arg Gly  
---  
Gln His Arg Arg Leu Pro Pro Pro Val Pro Arg His Gln Ile Glu Ala Arg \*\*\*  
Asn Thr Gly Gly Ser Pro Pro Leu Phe Gln Gly Ile Asn Phe Arg Leu Glu Asn  
Thr Pro Ala Ala Gln Pro Pro Ser Ser Ser Ala Ser Thr Ser Asp \*\*\* Ser Thr  
---  
CCA ACC ACG GCG GAC TCC CCC CCT CCT TGA CCG GCT ACA ACT TAG AGT CGA GCA  
1467 1476 1485 1494 1503 1512  
GGT TGG TGC CGC CTG AGG GGG GGA GGA ACT GGC CGA TGT TGA ATC TCA GCT CGT  
---  
Gly Trp Cys Arg Leu Arg Gly Gly Gly Thr Gly Arg Cys \*\*\* Ile Ser Ala Arg  
Val Gly Ala Ala \*\*\* Gly Gly Glu Glu Leu Ala Asp Val Glu Ser Gln Leu Val  
Leu Val Pro Pro Glu Gly Gly Arg Asn Trp Pro Met Leu Asn Leu Ser Ser Leu  
---  
Cys Glu Leu Ile Ala Ala Leu Thr Arg Arg Lys His His Thr Cys Ile Arg \*\*\*  
Val Asn Trp Ser Pro Gln Ser His Gly Gly Arg Ile Thr Leu Val Phe Glu Arg  
Leu Met Gly Leu His Ser Arg Thr Asp Glu Glu \*\*\* Pro Ser Tyr Leu Asn Glu  
---  
ATT GTA AGG TTC TAC CGA CGC TCA CAG GAG GAG AAT ACC ACT CAT GTT TAA GAG  
1521 1530 1539 1548 1557 1566  
TAA CAT TCC AAG ATG GCT GCG AGT GTC CTC CTC TTA TGG TGA GTA CAA ATT CTC  
---  
\*\*\* His Ser Lys Met Ala Ala Ser Val Leu Leu Leu Trp \*\*\* Val Gln Ile Leu  
Asn Ile Pro Arg Trp Leu Arg Val Ser Ser Ser Tyr Gly Glu Tyr Lys Phe Ser  
Thr Phe Gln Asp Gly Cys Glu Cys Pro Pro Leu Met Val Ser Thr Asn Ser Leu  
---  
Phe Pro Pro Phe Gln Leu Tyr Gly Asp Lys Pro Ala Met Gln Leu Pro Lys Gln  
Ser Leu Arg Ser Asn Phe Ile Gly Thr Lys Arg Arg Trp Arg Tyr Arg Asn Arg  
Leu Phe Ala Pro Ile Ser Ser Val Arg Arg Glu Ala Gly Asp Thr Val Thr Glu  
---  
ATC TTT CCG CCC TTA ACT TCT ATG GGC AGA AAG CCG CGG TAG ACA TTG CCA AAG  
1575 1584 1593 1602 1611 1620  
TAG AAA GGC GGG AAT TGA AGA TAC CCG TCT TTC GGC GCC ATC TGT AAC GGT TTC  
---  
\*\*\* Lys Gly Gly Asn \*\*\* Arg Tyr Pro Ser Phe Gly Ala Ile Cys Asn Gly Phe  
Arg Lys Ala Gly Ile Glu Asp Thr Arg Leu Ser Ala Pro Ser Val Thr Val Ser  
Glu Arg Arg Glu Leu Lys Ile Pro Val Phe Arg Arg His Leu \*\*\* Arg Phe Leu

FIGURE 3 (continuation 5)

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Leu Arg Pro Thr Gly Phe Ile Thr Lys Glu Pro Pro His Lys Trp Ser Pro Gln
Phe Ala Pro His Val Leu Tyr Pro Arg Arg Arg Leu Ile Asn Gly Leu His Ser
Ser Pro Pro Thr Tyr Trp Ile His Asp Glu Gly Ser Ser Thr Glu Leu Ile Ala
---
ACT TCC GCC CCA CAT GGT TTA TAC CAG AAG AGG CCT CCT ACA AAG GTT CTA CCG
1629 1638 1647 1656 1665 1674
TGA AGG CGG GGT GTA CCA AAT ATG GTC TTC TCC GGA GGA TGT TTC CAA GAT GGC
---
*** Arg Arg Gly Val Pro Asn Met Val Phe Ser Gly Gly Cys Phe Gln Asp Gly
Glu Gly Gly Val Tyr Gln Ile Trp Ser Ser Pro Glu Asp Val Ser Lys Met Ala
Lys Ala Gly Cys Thr Lys Tyr Gly Leu Leu Arg Arg Met Phe Pro Arg Trp Leu

Pro Pro Pro Asp Thr Lys Gln Pro Leu Ala Glu Lys Ala Val Asp Asp *** Leu
Arg Pro Arg Thr Arg Arg Arg Arg Tyr Arg Arg Arg Pro Trp Thr Met Arg Tyr
Ala Pro Ala Pro Gly Asp Glu Ala Thr Val Gly Gly Gln Gly Arg *** Gly Ile
---
ACG CCC CCG CCC AGG CAG AAG ACG CCA TTG CGG AGG AAC CCG TGC AGT AGG ATA
1683 1692 1701 1710 1719 1728
TGC GGG GGC GGG TCC GTC TTC TGC GGT AAC GCC TCC TTG GCC ACG TCA TCC TAT
---
Cys Gly Gly Gly Ser Val Phe Cys Gly Asn Ala Ser Leu Ala Thr Ser Ser Tyr
Ala Gly Ala Gly Pro Ser Ser Ala Val Thr Pro Pro Trp Pro Arg His Pro Ile
Arg Gly Arg Val Arg Leu Leu Arg *** Arg Leu Leu Gly His Val Ile Leu ***

Leu Ser Leu Leu Ala Ser Ser Tyr Tyr
Phe His Phe Phe His Ala Ala Thr Thr Asn
Phe Thr Phe Ser Thr Arg Gln Gln Leu Ile
---
TTT TCA CTT TCT TCA CGC GAC GAC ATC ATA A 5'
1737 1746 1755
AAA AGT GAA AGA AGT GCG CTG CTG TAG TAT T 3'
---
Lys Ser Glu Arg Ser Ala Leu Leu *** Tyr
Lys Val Lys Glu Val Arg Cys Cys Ser Ile
Lys *** Lys Lys Cys Ala Ala Val Val

```

FIGURE 3 (continuation 6)

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10	20	30	40	50	60
MPSKKSGPQP	HKRWVFTLNN	PSEEEKNKIR	ELPISLFDYF	VCGEEGLEEG	RTPHLQGFAN
70	80	90	100	110	120
FAKKQTFNKV	KWYFGARCHI	EKAKGTDQQN	KEYCSKEGHI	LIECGAPRNQ	GKRSDLSTAV
130	140	150	160	170	180
STLLETGSLV	TVAEQFPVTY	VRNFRGLAEL	LKVSGKMQR	DWKTAVHVIV	GPPGCGKSQW
190	200	210	220	230	240
ARNFAEPRDT	YWKPSRNKWW	DGYHGEEVVV	LDDFYGWLPW	DDLLRLCDRY	PLTVETKGGT
250	260	270	280	290	300
VPFLARSILI	TSNQAPQEWY	SSTAVPAVEA	LYRRITTLQF	WKTAGEQSTE	VPEGRFEAVD
310	320	330	340	350	360
PPCALFPYKI	NY*	.....	.....	.....	.....

FIGURE 4

10	20	30	40	50	60
MTWPERRYRR	RRTRPRSHLG	NILRRRPYLV	HPAFRNRYRW	RRKTGIFNSR	LSREFVLTR
70	80	90	100	110	120
GGHSQPSWNV	NELRFNIGQF	LPPSGGTNPL	PLPFQYYRIR	KAKYEFYPRO	PITSNQRGVG
130	140	150	160	170	180
STVVILDANF	VTPSTNLAYD	PYINYSSRHT	IRQPFTYHSR	YFTPKPELDQ	TIDWFQPNK
190	200	210	220	230	240
RNQLWLHLNT	HTNVEHTGLG	YALQNATTAQ	NYVVRLTIYV	QFREFILKDP	LNE*.....

FIGURE 5

10	20	30	40	50	60
MISIPPLIST	RLPVGVPRLS	KITGPLALPT	TGRAHYDVYS	CLPITLLHLP	AHFQKFSQPA
70	80	90	100	110	120
EISHIRYRKL	LGYSHQRPRL	QKGTHSSRQV	AALPLVPRSS	TLDKYVAFFT	AVFFILLVGS
130	140	150	160	170	180
FRFLDVAAGT	KIPLHLVKSL	LLSKIRKPLE	VRSSTLFQTF	LATNKIIKKG	DWKLPYFVFL
190	200	210	220	230	240
LLGRIIKGEN	PPLMGLRAAF	LAWHFH.....	.....	.....	.....

FIGURE 6

circopormank	1	10	20	30	40	50	
circopormeeh	1	ACCAGCGCAC	TTCCGGCAGCG	GCAGCACCTC	GGCAGCGTCA	GTGAAATGCG	50
circopordfp	1	ACCAGCGCAC	TTCCGGCAGCG	GCAGCACCTC	GGCAGCGTCA	GTGAAATGCG	50
circopormank	51	60	70	80	90	100	
circopormeeh	51	CAAGCAAGAA	AAGCGGCCCG	CAACCCCAT	AGAGGTGGGT	GTTCACCCCTT	100
circopordfp	51	CAAGCAAGAA	AAGCGGCCCG	CAACCCCAT	AGAGGTGGGT	GTTCACCCCTT	100
circopormank	101	110	120	130	140	150	
circopormeeh	101	AATAATCCTT	CCGAGGAGGA	GAAAAACAAA	ATACGGGAGC	TTCCAATCTC	150
circopordfp	101	AATAATCCTT	CCGAGGAGGA	GAAAAACAAA	ATACGGGAGC	TTCCAATCTC	150
circopormank	151	160	170	180	190	200	
circopormeeh	151	CTTTTGTAT	TATTTTGT	GGGAGAGGA	AGTTTGGAA	GAGGGTAGAA	200
circopordfp	151	CTTTTGTAT	TATTTTGT	GGGAGAGGA	AGTTTGGAA	GAGGGTAGAA	200
circopormank	201	210	220	230	240	250	
circopormeeh	201	CTCTCACCT	CCAGGGGTTT	GCTAATTTTG	CTAAGAAGCA	SACTTTTAAC	250
circopordfp	201	CTCTCACCT	CCAGGGGTTT	GCGAATTTTG	CTAAGAAGCA	SACTTTTAAC	250
circopormank	251	260	270	280	290	300	
circopormeeh	251	AAGGTGAAGT	GGTATTTTGG	TGCCCCGTGC	CACATCGAGA	AAGCGAAAGG	300
circopordfp	251	AAGGTGAAGT	GGTATTTTGG	TGCCCCGTGC	CACATCGAGA	AAGCGAAAGG	300
circopormank	301	310	320	330	340	350	
circopormeeh	301	AACCGACCAG	CAGAATAAAG	ATACTGCAG	TAAAGAAGGC	CACATACTTA	350
circopordfp	301	AACCGACCAG	CAGAATAAAG	ATACTGCAG	TAAAGAAGGC	CACATACTTA	350
circopormank	351	360	370	380	390	400	
circopormeeh	351	TCGAGTGTGG	AGCTCCGCGG	AACCGAGGGA	AGCGCAGCGA	CTGTCTACT	400
circopordfp	351	TCGAGTGTGG	AGCTCCGCGG	AACCGAGGGA	AGCGCAGCGA	CTGTCTACT	400
circopormank	401	410	420	430	440	450	
circopormeeh	401	CTGTGAGTA	CCCTTTTGG	GACGGGGTCT	TTGGTGACTG	TAGCCGAGCA	450
circopordfp	401	CTGTGAGTA	CCCTTTTGG	GACGGGGTCT	TTGGTGACTG	TAGCCGAGCA	450
circopormank	451	460	470	480	490	500	
circopormeeh	451	GTTCCTGTA	ACGTATGTGA	GAAATTTCCG	CGGGCTGGCT	GAACTTTGA	500
circopordfp	451	GTTCCTGTA	ACGTATGTGA	GAAATTTCCG	CGGGCTGGCT	GAACTTTGA	500
circopormank	501	510	520	530	540	550	
circopormeeh	501	AAGTGAGCGG	GAAGATGCAG	CAGCGTGATT	GGAAGACAGC	TGTACACGTC	550
circopordfp	501	AAGTGAGCGG	GAAGATGCAG	CAGCGTGATT	GGAAGACAGC	TGTACACGTC	550
circopormank	551	560	570	580	590	600	
circopormeeh	551	ATAGTGGGCC	CGCCCGGTTG	TGGGAAGAGC	CAGTGGGCCC	GTAATTTTGC	600
circopordfp	551	ATAGTGGGCC	CGCCCGGTTG	TGGGAAGAGC	CAGTGGGCCC	GTAATTTTGC	600

FIGURE 7

circopormank	601	610	620	630	640	650	
circopormeeh	601	TGAGCCTAGG	SACACCTACT	GGAAGCCTAG	TAGAAATAAG	TGGTGGGATG	650
circopordfp	601	TGAGCCTAGG	SACACCTACT	GGAAGCCTAG	TAGAAATAAG	TGGTGGGATG	650
						TGGTGGGATG	650
circopormank	651	660	670	680	690	700	
circopormeeh	651	GATATCATGG	AGAAGAAGTT	TTTGTITTTG	ATGATTTTTA	TGGCTGGTTA	700
circopordfp	651	GATATCATGG	AGAAGAAGTT	TTTGTITTTG	ATGATTTTTA	TGGCTGGTTA	700
						TGGCTGGTTA	700
circopormank	701	710	720	730	740	750	
circopormeeh	701	CTTGGGATG	ATCTACTGAG	ACTGTGTGAC	CGGTATCCAT	TGACTGTAGA	750
circopordfp	701	CTTGGGATG	ATCTACTGAG	ACTGTGTGAC	CGGTATCCAT	TGACTGTAGA	750
						TGACTGTAGA	750
circopormank	751	760	770	780	790	800	
circopormeeh	751	GACTAAAGGC	GGTACTGTTG	TTTTTTTGGC	TGGCAGTATT	TTGATTACCA	800
circopordfp	751	GACTAAAGGC	GGTACTGTTG	TTTTTTTGGC	TGGCAGTATT	TTGATTACCA	800
						TTGATTACCA	800
circopormank	801	810	820	830	840	850	
circopormeeh	801	GCAATCAGGC	CCCCCAGGAA	TGGTACTCCT	CAACTGCTGT	CCCAGCTGTA	850
circopordfp	801	GCAATCAGGC	CCCCCAGGAA	TGGTACTCCT	CAACTGCTGT	CCCAGCTGTA	850
						CCCAGCTGTA	850
circopormank	851	860	870	880	890	900	
circopormeeh	851	GAAGCTCTCT	ATCGGAGGAT	TACTACTTTG	CAATTTTGGA	AGACTGCTGG	900
circopordfp	851	GAAGCTCTCT	ATCGGAGGAT	TACTACTTTG	CAATTTTGGA	AGACTGCTGG	900
						AGACTGCTGG	900
circopormank	901	910	920	930	940	950	
circopormeeh	901	GAACAATCA	ACGGAGGTAC	CCGAAGGCCG	ATTTGAAGCA	GTGGACCCAC	950
circopordfp	901	GAACAATCA	ACGGAGGTAC	CCGAAGGCCG	ATTTGAAGCA	GTGGACCCAC	950
						GTGGACCCAC	950
circopormank	951	960	970	980	990	1000	
circopormeeh	951	CTGTGCCCT	TTTCCCATAT	AAAATAAATT	ACTGAGTCTT	TTTTGTATC	1000
circopordfp	951	CTGTGCCCT	TTTCCCATAT	AAAATAAATT	ACTGAGTCTT	TTTTGTATC	1000
						TTTTGTATC	1000
circopormank	1001	1010	1020	1030	1040	1050	
circopormeeh	1001	ACATCGTAAT	GGTTTTTATT	TTTATTTATT	TAGAGGGTCT	TTTAGGATAA	1050
circopordfp	1001	ACATCGTAAT	GGTTTTTATT	TTTATTTATT	TAGAGGGTCT	TTTAGGATAA	1050
						TTTAGGATAA	1050
circopormank	1051	1060	1070	1080	1090	1100	
circopormeeh	1051	ATTCTCTGAA	TTGTACATAA	ATAGTCAGCC	TTACCACATA	ATTTTGGGCT	1100
circopordfp	1051	ATTCTCTGAA	TTGTACATAA	ATAGTCAGCC	TTACCACATA	ATTTTGGGCT	1100
						ATTTTGGGCT	1100
circopormank	1101	1110	1120	1130	1140	1150	
circopormeeh	1101	GTGGCTGCAT	TTTGGAGCGC	ATAGCCGAGG	CTGTGTGCT	CGACATTGGT	1150
circopordfp	1101	GTGGCTGCAT	TTTGGAGCGC	ATAGCCGAGG	CTGTGTGCT	CGACATTGGT	1150
						CGACATTGGT	1150
circopormank	1151	1160	1170	1180	1190	1200	
circopormeeh	1151	GTGGGTATTT	AAATGGAGCC	ACAGCTGGTT	TCTTTTATTA	TTTGGGTGGA	1200
circopordfp	1151	GTGGGTATTT	AAATGGAGCC	ACAGCTGGTT	TCTTTTATTA	TTTGGGTGGA	1200
						TTTGGGTGGA	1200

FIGURE 7 (continuation 1)

		1210	1220	1230	1240	1250	
circopormank	1201	ACCAATCAAT	TGTTTGGTCC	AGCTCAGGTT	TGGGGGTGAA	GTACCTGGAG	1250
circopormeeh	1201	ACCAATCAAT	TGTTTGGTCC	AGCTCAGGTT	TGGGGGTGAA	GTACCTGGAG	1250
circopordfp	1201	ACCAATCAAT	TGTTTGGTCC	AGCTCAGGTT	TGGGGGTGAA	GTACCTGGAG	1250
		1260	1270	1280	1290	1300	
circopormank	1251	TGGTAGGTAA	AGGGCTGCCT	TATGGTGTGG	GGGAGGAGT	AGTTAATATA	1300
circopormeeh	1251	TGGTAGGTAA	AGGGCTGCCT	TATGGTGTGG	GGGAGGAGT	AGTTAATATA	1300
circopordfp	1251	TGGTAGGTAA	AGGGCTGCCT	TATGGTGTGG	GGGAGGAGT	AGTTAATATA	1300
		1310	1320	1330	1340	1350	
circopormank	1301	GGGGTCATAG	GCCAAGTTGG	TGGAGGGGGT	TACAAAGTTG	GCATCCAAGA	1350
circopormeeh	1301	GGGGTCATAG	GCCAAGTTGG	TGGAGGGGGT	TACAAAGTTG	GCATCCAAGA	1350
circopordfp	1301	GGGGTCATAG	GCCAAGTTGG	TGGAGGGGGT	TACAAAGTTG	GCATCCAAGA	1350
		1360	1370	1380	1390	1400	
circopormank	1351	TAACAACAGT	GGACCCAACA	CCTCTTTGAT	TAGAGGTGAT	GGGGTCTCTG	1400
circopormeeh	1351	TAACAACAGT	GGACCCAACA	CCTCTTTGAT	TAGAGGTGAT	GGGGTCTCTG	1400
circopordfp	1351	TAACAACAGT	GGACCCAACA	CCTCTTTGAT	TAGAGGTGAT	GGGGTCTCTG	1400
		1410	1420	1430	1440	1450	
circopormank	1401	GGGTAAAATT	CATATTTAGC	TTTCTAATA	GGTAGTATT	GGAAAGGTAG	1450
circopormeeh	1401	GGGTAAAATT	CATATTTAGC	TTTCTAATA	GGTAGTATT	GGAAAGGTAG	1450
circopordfp	1401	GGGTAAAATT	CATATTTAGC	TTTCTAATA	GGTAGTATT	GGAAAGGTAG	1450
		1460	1470	1480	1490	1500	
circopormank	1451	GGGTAGGGGG	TTGGTGCCGC	GTGAGGGGGG	GAGGAAGTGG	TCGATGTTGA	1500
circopormeeh	1451	GGGTAGGGGG	TTGGTGCCGC	GTGAGGGGGG	GAGGAAGTGG	TCGATGTTGA	1500
circopordfp	1451	GGGTAGGGGG	TTGGTGCCGC	GTGAGGGGGG	GAGGAAGTGG	TCGATGTTGA	1500
		1510	1520	1530	1540	1550	
circopormank	1501	ATCTGAGGTG	GTTAACATTC	CAAGATGGCT	GCGAGTATCC	TCCTTTTATG	1550
circopormeeh	1501	ATCTGAGGTG	GTTAACATTC	CAAGATGGCT	GCGAGTATCC	TCCTTTTATG	1550
circopordfp	1501	ATCTGAGGTG	GTTAACATTC	CAAGATGGCT	GCGAGTATCC	TCCTTTTATG	1550
		1560	1570	1580	1590	1600	
circopormank	1551	GTGAGTACAA	ATTCTCTAGA	AAGGCGGGAA	TTGAAGATAC	CCGTCTTTTCG	1600
circopormeeh	1551	GTGAGTACAA	ATTCTCTAGA	AAGGCGGGAA	TTGAAGATAC	CCGTCTTTTCG	1600
circopordfp	1551	GTGAGTACAA	ATTCTCTAGA	AAGGCGGGAA	TTGAAGATAC	CCGTCTTTTCG	1600
		1610	1620	1630	1640	1650	
circopormank	1601	GCGCCATCTG	TAACGGTTTC	TGAAGGCGGG	GTGTGCCAAA	TATGGTCTTC	1650
circopormeeh	1601	GCGCCATCTG	TAACGGTTTC	TGAAGGCGGG	GTGTGCCAAA	TATGGTCTTC	1650
circopordfp	1601	GCGCCATCTG	TAACGGTTTC	TGAAGGCGGG	GTGTGCCAAA	TATGGTCTTC	1650
		1660	1670	1680	1690	1700	
circopormank	1651	TCCGGAGGAT	TTTCCAAGA	TGGCTGCGGG	GCGGGTCTCT	TCTTCTGCGG	1700
circopormeeh	1651	TCCGGAGGAT	TTTCCAAGA	TGGCTGCGGG	GCGGGTCTCT	TCTTCTGCGG	1700
circopordfp	1651	TCCGGAGGAT	TTTCCAAGA	TGGCTGCGGG	GCGGGTCTCT	TCTTCTGCGG	1700
		1710	1720	1730	1740	1750	
circopormank	1701	TAACGCCTCC	TGGCCACGT	CATCCTATAA	AAGTGAAGA	AGTGGCGTGC	1750
circopormeeh	1701	TAACGCCTCC	TGGCCACGT	CATCCTATAA	AAGTGAAGA	AGTGGCGTGC	1750
circopordfp	1701	TAACGCCTCC	TGGCCACGT	CATCCTATAA	AAGTGAAGA	AGTGGCGTGC	1750
		1760	1770	1780	1790	1800	
circopormank	1751	TGTAGTATT	.....	.....	.....	.....	1800
circopormeeh	1751	TGTAGTATT	.....	.....	.....	.....	1800
circopordfp	1751	TGTAGTATT	.....	.....	.....	.....	1800

FIGURE 7 (continuation 2)

		10	20	30	40	50	
circopormank	1	MPSKKSGPOP	HKRWVFTLNN	PSEEEKNKIR	ELPISLFDYF	WCGEEGLEEG	50
circopormeeh	1	MPSKKSGPOP	HKRWVFTLNN	PSEEEKNKIR	ELPISLFDYF	WCGEEGLEEG	50
circopordfp[	1	MPSKKSGPOP	HKRWVFTLNN	PSEEEKNKIR	ELPISLFDYF	WCGEEGLEEG	50
		60	70	80	90	100	
circopormank	51	RTAHLQGFAN	FAKKQTFNKV	KWYFGARCHI	EKAKGTDQON	KEYCSKEGHI	100
circopormeeh	51	RTPHLQGFAN	FAKKQTFNKV	KWYFGARCHI	EKAKGTDQON	KEYCSKEGHI	100
circopordfp[	51	RTPHLQGFAN	FAKKQTFNKV	KWYFGARCHI	EKAKGTDQON	KEYCSKEGHI	100
		110	120	130	140	150	
circopormank	101	IECGAPRNO	GKRSOLSTAV	STLLETGSLV	TVAEQFPVTY	VRNFRGLAEL	150
circopormeeh	101	IECGAPRNO	GKRSOLSTAV	STLLETGSLV	TVAEQFPVTY	VRNFRGLAEL	150
circopordfp[	101	IECGAPRNO	GKRSOLSTAV	STLLETGSLV	TVAEQFPVTY	VRNFRGLAEL	150
		160	170	180	190	200	
circopormank	151	KVSGKMQR	QWKTAVHVIV	GPPGCGKSQW	ARNFAEPDPT	YWKPSRNKWW	200
circopormeeh	151	KVSGKMQR	QWKTAVHVIV	GPPGCGKSQW	ARNFAEPDPT	YWKPSRNKWW	200
circopordfp[	151	KVSGKMQR	QWKTAVHVIV	GPPGCGKSQW	ARNFAEPDPT	YWKPSRNKWW	200
		210	220	230	240	250	
circopormank	201	DGYHGEEVVV	DDFYGWLWP	ODLLRLCDRY	PLTVETKGGT	VPFLARSILI	250
circopormeeh	201	DGYHGEEVVV	DDFYGWLWP	ODLLRLCDRY	PLTVETKGGT	VPFLARSILI	250
circopordfp[	201	DGYHGEEVVV	DDFYGWLWP	ODLLRLCDRY	PLTVETKGGT	VPFLARSILI	250
		260	270	280	290	300	
circopormank	251	TSNQAPQEWY	SSTAVPAVEA	YRRITTLQF	WKTAGEQSTE	VPEGRFEAVD	300
circopormeeh	251	TSNQAPQEWY	SSTAVPAVEA	YRRITTLQF	WKTAGEQSTE	VPEGRFEAVD	300
circopordfp[	251	TSNQAPQEWY	SSTAVPAVEA	YRRITTLQF	WKTAGEQSTE	VPEGRFEAVD	300
		310	320	330	340	350	
circopormank	301	PPCALFPYKI	NY	.....	.....	.....	350
circopormeeh	301	PPCALFPYKI	NY	.....	.....	.....	350
circopordfp[	301	PPCALFPYKI	NY	.....	.....	.....	350

FIGURE 8

		10	20	30	40	50	
circopormank	1	MTWPRRRYRR	RRTRPRLSHLG	NILRRRPYLA	HPAFRRNRYRW	RRKTGIFNCR	50
circopormeeh	1	MTWPRRRYRR	RRTRPRLSHLG	NILRRRPYLA	HPAFRRNRYRW	RRKTGIFNCR	50
circopordfp[	1	MTWPRRRYRR	RRTRPRLSHLG	NILRRRPYLV	HPAFRRNRYRW	RRKTGIFNSR	50
		60	70	80	90	100	
circopormank	51	SEFVLTIK	GGYSQPSWNV	NILRRNIGQF	LPPSGGTNPL	PLPFQYYRIR	100
circopormeeh	51	SEFVLTIK	GGYSQPSWNV	NILRRNIGQF	LPPSGGTNPL	PLPFQYYRIR	100
circopordfp[	51	SEFVLTIK	GGYSQPSWNV	NILRRNIGQF	LPPSGGTNPL	PLPFQYYRIR	100
		110	120	130	140	150	
circopormank	101	KAKYEFYPRD	PITSNQRGVG	STVVILDANF	VTPSTNLAYD	PYINYSSRHT	150
circopormeeh	101	KAKYEFYPRD	PITSNQRGVG	STVVILDANF	VTPSTNLAYD	PYINYSSRHT	150
circopordfp[	101	KAKYEFYPRD	PITSNQRGVG	STVVILDANF	VTPSTNLAYD	PYINYSSRHT	150
		160	170	180	190	200	
circopormank	151	IRQPFYHSR	YFTPKPELDQ	TIDWFHPNNK	RNQLWLHLNT	HTNVEHTGLG	200
circopormeeh	151	IRQPFYHSR	YFTPKPELDQ	TIDWFHPNNK	RNQLWLHLNT	HTNVEHTGLG	200
circopordfp[	151	IRQPFYHSR	YFTPKPELDQ	TIDWFHPNNK	RNQLWLHLNT	HTNVEHTGLG	200
		210	220	230	240	250	
circopormank	201	YALQNAATAQ	NYVVRLTIYV	QFREFILKDP	LNK.....	.....	250
circopormeeh	201	YALQNAATAQ	NYVVRLTIYV	QFREFILKDP	LNK.....	.....	250
circopordfp[	201	YALQNAATAQ	NYVVRLTIYV	QFREFILKDP	LNK.....	.....	250

FIGURE 9

		10	20	30	40	50	
circopormank	1	MISIPPLIST	RLPVGVARLS	XITGPLALPT	TGRAHYDVYS	CLPITLLHLP	50
circopormeeh	1	MISIPPLIST	RLPVGVPRLS	XITGPLALPT	TGRAHYDVYS	CLPITLLHLP	50
circopordfp[	1	MISIPPLIST	RLPVGVPRLS	XITGPLALPT	TGRAHYDVYS	CLPITLLHLP	50
		60	70	80	90	100	
circopormank	51	AHFQKFSQPA	EISHIRYREL	LGYSHORPRL	QKGTSSSRQV	AALPLVPRSS	100
circopormeeh	51	AHFQKFSQPA	EISHIRYREL	LGYSHORPRL	QKGTSSSRQV	AALPLVPRSS	100
circopordfp[	51	AHFQKFSQPA	EISHIRYRK	LGYSHORPRL	QKGTSSSRQV	AALPLVPRSS	100
		110	120	130	140	150	
circopormank	101	TLDKYVAFFT	AVFFILLVGS	FRFLDVAAGT	KIPLHLVKSL	LSKISKPLE	150
circopormeeh	101	TLDKYVAFFT	AVFFILLVGS	FRFLDVAAGT	KIPLHLVKSL	LSKISKPLE	150
circopordfp[	101	TLDKYVAFFT	AVFFILLVGS	FRFLDVAAGT	KIPLHLVKSL	LSKISKPLE	150
		160	170	180	190	200	
circopormank	151	VRSSTLFQTF	LSANKIIKKG	DWKLPYFVFL	LLGRIIKGEH	PPLMGLRAAF	200
circopormeeh	151	VRSSTLFQTF	LSANKIIKKG	DWKLPYFVFL	LLGRIIKGEH	PPLMGLRAAF	200
circopordfp[	151	VRSSTLFQTF	LSANKIIKKG	DWKLPYFVFL	LLGRIIKGEH	PPLMGLRAAF	200
		210	220	230	240	250	
circopormank	201	LAWHFH.....	.....	.....	.....	.....	250
circopormeeh	201	LAWHFH.....	.....	.....	.....	.....	250
circopordfp[	201	LAWHFH.....	.....	.....	.....	.....	250

FIGURE 10



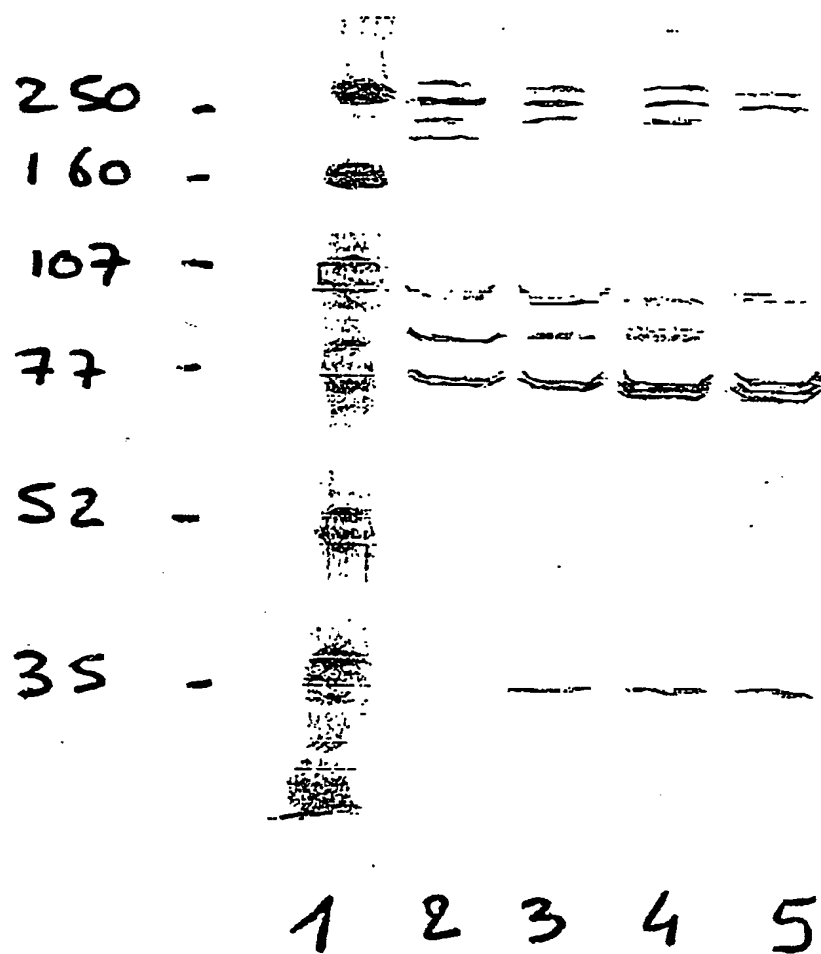


FIGURE 11